

In the claims:

1. In a radio communication system having a mobile node operable to communicate data by way of a radio link with a fixed network, the mobile node associated with a home network provider that provides communication services for communication with the mobile node when the mobile node is positioned to communicate with a first portion of the fixed network, and the mobile node permitted mobility, selectably to be positioned to communicate with at least a second portion of the fixed network, communication services provided at the at least the second portion of the fixed network by at least one non-home network provider, an improvement of apparatus for facilitating determination of routing information by which to route the data communicated by the mobile node when positioned to communicate with any of the first and at least second portions of the fixed network, said apparatus comprising:

a registration request detector adapted to receive indications of a registration request generated by the mobile node, said registration request detector for detecting values of the registration request;

at least a first table accessible at least responsive to detection by said registration request detector of the values of the registration request, said first table containing routing information indexed together with indicia associated with selected values of the registration request;

a routing determiner adapted selectably to receive indications of selected routing information contained in said at least the first table, said routing determiner, responsive at least in part to the routing information, for determining routing by which the data is to be communicated by the mobile node, the routing determined by said routing determiner usable by the mobile node when positioned to communicate with the any of the first and at least second portions of the fixed network.

2. The apparatus of claim 1 wherein the registration request that said registration request detector is adapted to receive comprises identification of the home network provider with which the mobile node is associated and wherein the indicia associated with the selected values of the registration request indexed together in said first table comprises the identification of the home network provider.

3. The apparatus of claim 2 wherein the registration request that said registration request detector is adapted to receive further comprises identification of the non-home network provider when the mobile node generates the registration request when positioned to communicate with the at least the second portion of the fixed network,
5 and wherein the routing determined by said routing determiner is further responsive to the identification of the non-home network provider.

4. The apparatus of claim 2 wherein the routing determined by said routing determiner is further responsive to the identification of the home network provider.
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5. The apparatus of claim 1 wherein the network part of the radio communication system comprises a registration server to which the registration request formed by the mobile node is sent and wherein said registration request detector is embodied at the registration server.
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6. The apparatus of claim 5 wherein said at least the first table and said routing determiner are embodied at the registration server.

7. The apparatus of claim 1 wherein the at least the second portion of the fixed network comprises the second portion and at least a third portion, wherein the second and third portions, respectively, encompass at least partially overlapping coverage areas, communication services provided at the second portion by a first non-home network provider and communication services provided at the third portion by a second non-home network provider, the routing determined by said routing determiner further
20 responsive to whether roaming agreements are in place between at least one of the home network provider and the first non-home network provider and the home network provider and the at least the second non-home network provider.
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8. The apparatus of claim 7 wherein the routing determined by said determiner is further responsive to whether the agreements, if any, in place between the home network provider and the first non-home network provider and the home network
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provider and the at least the second non-home network provider comprise bi-directional agreements.

9. The apparatus of claim 1 wherein the routing determined by said routing
5 determiner comprises an internet protocol address to be used to address the data to be
routed by the mobile node.

10. The apparatus of claim 1 wherein the routing determined by said routing
determiner comprises direct routing forming direct paths between at least a selected one
10 of the at least the second portion of the network part and the first portion of the network
part.

11. The apparatus of claim 1 wherein the routing information indexed at said
at least the first database together with the indicia associated with the selected values of
15 the registration request comprise host routing information entries associated with the
home network provider of the mobile node.

12. The apparatus of claim 11 wherein the routing determined by said routing
determiner includes, in part, the host routing information indexed together at said at least
20 first table with the home network provider.

13. The apparatus of claim 11 wherein at least one of the first network part and
the second network part comprises a plurality of sub-parts, wherein said at least first table
further indexes together host routing information entries with the subparts of the at least
25 one of the first network part and the second network part.

14. The apparatus of claim 13 wherein the routing determined by said routing
determiner includes, in part, the host routing information entries indexed together at said
at least first table with the subparts of the at least one of the first network part and the
second network part.

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15. In a method of communicating in a radio communication system having a
mobile node operable to communicate data by way of a radio link with a fixed network,

the mobile node associated with a home network provider that provides communication services for communication with the mobile node when the mobile node is positioned to communicate with a first portion of the fixed network, and the mobile node permitted mobility, selectably to be positioned to communicate with at least a second portion of the fixed network, communication services provided at the at least the second portion of the fixed network by at least one non-home network provider, an improvement of a method for facilitating determination of routing information by which to route the data communicated by the mobile node when positioned to communicate with any of the first and at least second portions of the fixed network, said method comprising:

- 10 detecting values of a registration request generated by the mobile node;
 accessing at least a first table to ascertain routing information indexed together with indicia associated with selected values of the registration request; and
 determining routing by which the data is to be communicated by the mobile node, the routing usable by the mobile node when positioned to communicate with the any of
15 the first and at least second portions of the fixed network.

16. The method of claim 15 wherein the registration request detected during said operation of detecting comprises identification of the home network provider with which the mobile node is associated and wherein the indicia associated with the selected
20 values accessed during said operation of accessing comprise the identification of the home network provider.

- 17 The method of claim 15 wherein the registration request detected during said operation of detecting comprises identification of the non-home network provider
25 when the mobile node generates the registration request when positioned to communicate with the at least the second portion of the fixed network, the routing determined during said operation of determining further responsive to the identification of the non-home network provider.

- 30 18. The method of claim 1 wherein the at least the second portion of the fixed network comprises the second portion and at least a third portion, wherein the second and third portions, respectively, encompass at least partially overlapping coverage areas,

communication services provided at the second portion by a first non-home network provider and communication services provided at the third portion by a second non-home network provider and communication services provided at the third portion by a second non-home network provider, the routing determined during said operation of routing
5 further responsive to whether roaming agreements are in place between at least one of the home network provider and the first non-home network provider and the at least the second non-home network provider.

19. The method of claim 18 wherein the routing determined during said
10 operation of determining routing is further responsive to whether the roaming agreements, if any, in place between the home network provider and the first non-home network provider and the home network provider and the at least the second non-home network provider comprise bi-directional agreements.

15 20. The method of claim 15 wherein the fixed network comprises a registration server and wherein said operations of detecting, accessing, and determining are performed at the registration server.